



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/567,830

09/26/2006

Takeshi Nakamura

M1071.1960

2884

32172 7590 10/16/2007

DICKSTEIN SHAPIRO LLP
1177 AVENUE OF THE AMERICAS (6TH AVENUE)
NEW YORK, NY 10036-2714

EXAMINER

PENDLETON, DIONNE

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

10/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/567,830

Applicant(s)

NAKAMURA, TAKESHI

Examiner

Dionne H. Pendleton

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 19,21,24-28,30,33-42** are rejected under 35 U.S.C. 102(b) as being anticipated by **Mindel (US 4,870,691)**.

Regarding claim 19,

Mindel teaches a diffuser for placement in front of a sound wave emission side of a cone-shaped sound source ("11" in figure 3b), the diffuser comprising: a flow plate ("*15" in figure 3b indicates one of three "flow plates" provided*") positioned along a sound wave emission direction of the sound source, the flow plate (15) having a wall tapered inwardly in the sound wave emission direction.

Regarding claim 21,

Mindel teaches the diffuser as claimed in claim 19, wherein the flow plate (15) is an inner flow plate and the diffuser further comprises an outer flow plate (4) positioned along the sound wave emission direction.

Regarding claim 24,

Mindel teaches the diffuser as claimed in claim 19, wherein the flow plate ("15" in figure 3b) includes at least two spaced apart plates, inclined towards each other.

Regarding claim 25,

Mindel teaches the diffuser as claimed in claim 21, wherein the inner flow plate (15) includes at least two spaced apart plates (shown in figure 3b), inclined towards each other.

Regarding claim 26,

Mindel teaches the diffuser as claimed in claim 25. And in *column 5, lines 14-17*, teaches increasing the size of opening (6) via pivoting pins (16). By increasing size of opening (6) such that the length of plates (4) runs parallel to the *direction of the sound emission wave*, the outwardly angled surface ends (18) of plates (4) will correspond to the claim recitation requiring that the two spaced apart plates (4) are "inclined away from each".

Regarding claim 27,

Mindel teaches the diffuser according to claim 19, wherein the flow plate (15) is a first flow plate and the diffuser further comprises a second flow plate (4), the second flow plate positioned adjacent the first flow plate along the sound wave emission direction of the sound source, the second flow plate (4) having a wall tapered inwardly in the sound wave emission direction.

Art Unit: 2627

Regarding claim 28,

Mindel teaches a diffuser for placement in front of a sound wave emission side of a cone-shaped sound source (11), the diffuser comprising: a flow plate (15) positioned along a sound wave emission direction of the sound source, the flow plate having a first opening (shown) proximal to the sound source and a second opening (6) distal from the sound source, the first opening being larger than the second opening.

Regarding claim 30,

Mindel teaches the diffuser as claimed in claim 28, wherein the flow plate (15) is an inner flow plate and the diffuser further comprises an outer flow plate (4) positioned along the sound wave emission direction.

Regarding claim 33,

Mindel teaches the diffuser as claimed in claim 28, wherein the flow plate ("15" in figure 3b) includes at least two spaced apart plates, inclined towards each other.

Regarding claim 34,

Mindel teaches the diffuser as claimed in claim 30, wherein the inner flow plate includes at least two spaced apart plates (shown in figure 3b), inclined towards each other.

Art Unit: 2627

Regarding claim 35,

Mindel teaches the diffuser as claimed in claim 34. And in *column 5, lines 14-17*, teaches increasing the size of opening (6) using pivoting pins (16). By increasing the size of opening (6) such that the length of plates (4) runs parallel to the *direction of the sound emission wave*, the outwardly angled surface ends (18) of plates (4) will correspond to the claim recitation requiring that the two spaced apart plates (4) are "inclined away from each".

Regarding claim 36,

Mindel teaches the diffuser according to claim 28, wherein the flow plate is a first flow plate (15) and the diffuser further comprises a second flow plate (4), the second flow plate (4) positioned adjacent the first flow plate (15) along the sound wave emission direction of the sound source, the second flow plate (4) having a first opening (see, *"opening" into which speaker (11) is mounted*) proximal to the sound source and a second opening (6) distal from the sound source, the first opening being larger than the second opening.

Regarding claim 37,

Mindel teaches a speaker comprising: a sound source (11) having a sound wave emission side; and a diffuser (15) according to claim 19 located in front of the sound wave emission side of the sound source.

Regarding claim 38,

Mindel teaches the speaker according to claim 37, further comprising a protective net (shown in figure 3a, 3b; also see *column 5, lines 30-32*) disposed in front of the sound wave emission side of the sound source (11), the diffuser being fixed to the protective net.

Regarding claim 39,

Mindel teaches the speaker according to claim 38, wherein the diffuser ("15" in figure 3b) is fixed in front of the protective net, behind the protective net, or both in front of and behind the protective net.

Regarding claim 40,

Mindel teaches a speaker comprising: a sound source ("11" in figure 3b) having a sound wave emission side; and a diffuser (15) according to claim 28 located in front of the sound wave emission side of the sound source.

Regarding claim 41,

Mindel teaches the speaker according to claim 40, further comprising a protective net (shown in figures 3a,3b) disposed in front of the sound wave emission side of the sound source, the diffuser (15) being fixed to the protective net (see figure 3b).

Art Unit: 2627

Regarding claim 42,

Mindel teaches the speaker according to claim 41, wherein the diffuser (15) is fixed in front of the protective net, behind the protective net, or both in front of and behind the protective net.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 20,22,23,29,31 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mindel (US 4,870,691)** in view of **JP 50-42838**.

Regarding claims 20 and 22,

Mindel teaches the diffuser as claimed in claims 19 and 21.

Mindel does not teach that the flow plate is a "tapered cone shape" OR "a tapered cone" as respectively recited in claims 20 and 22.

However, Mindel does not require that the shape of flow plate (4) be restricted to particular configurations.

JP 50-42838 teaches in Figure 3, that a flow plate (21) may be provided in the shape of a tapered cone.

It would have been obvious for one of ordinary skill in the art at the time of the invention to substitute the tapered cone-shape taught by **JP 50-42838** for the shape taught by **Mindel**, for the purpose of achieving a predetermined frequency response of the emitted sound wave.

Regarding claim 23,

Mindel teaches the diffuser as claimed in claim 22, wherein the outer flow plate ("4" in figure 3b) has a first opening proximal to the sound source (see "opening" into which loudspeaker "11" is mounted) and a second opening (6) distal from the sound source, the first opening being smaller than the second opening (*see, column 5, lines 14-17, wherein Mindel teaches that the second opening may be size adjusted by pivot points "16" in figure 3a. Notice that when wall "4" is rotated such that it's length lies parallel to the direction of the sound emission wave, the first opening will be smaller than the opening at the angled surface end (18) of the second opening (6).*)

Regarding claims 29 and 31,

Mindel teaches the diffuser as claimed in claims 28 and 30.

Mindel does not teach that the flow plate is a "tapered cone shape" OR "a tapered cone" as respectively recited in claims 29 and 31.

However, Mindel does not require that the shape of flow plate (4) be restricted to particular configurations.

JP 50-42838 teaches in Figure 3, that a flow plate (21) may be provided in the shape of a tapered cone.

It would have been obvious for one of ordinary skill in the art at the time of the invention to substitute the tapered cone-shape taught by **JP 50-42838** for the shape taught by **Mindel**, for the purpose of achieving a predetermined frequency response of the emitted sound wave.

Regarding claim 32,

Mindel teaches the diffuser as claimed in claim 31, wherein the outer flow plate ("4" in figure 3b) has a first opening proximal to the sound source (see "opening" into which loudspeaker "11" is mounted) and a second opening (6) distal from the sound source, the first opening being smaller than the second opening (*see, column 5, lines 14-17, wherein Mindel teaches that the second opening may be size adjusted by pivot points "16" in figure 3a. Notice that when wall "4" is rotated such that it's length lies parallel to the direction of the sound emission wave, the first opening will be smaller than the opening at the angled surface end (18) of the second opening (6).*)

Response to Arguments

3. Applicant's arguments with respect to claims 19-42 have been considered but are moot in view of the new ground(s) of rejection.

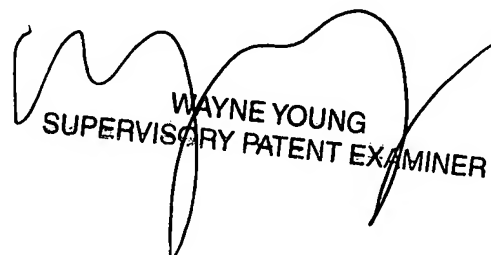
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne H. Pendleton whose telephone number is 571-272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


D. Pendleton


WAYNE YOUNG
SUPERVISORY PATENT EXAMINER